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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/703,334	10/31/2000	Viktors Berstis	AUS9-2000-0734-US1	3075

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EXAMINER

LINDINGER, MICHAEL L

ART UNIT PAPER NUMBER

2841

DATE MAILED: 03/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/703,334

Applicant(s)

BERSTIS ET AL.

Examiner

Michael L. Lindinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Any Amendments to the Claims must present a clear line of distinction so as preclude an Obviousness Double Patenting Rejection. As an Example, a brief comparison has been made between Claim 1 of the four co-pending Applications in order to highlight the present similarities:

09/703,334 discloses a time cell, which experiences a transition of states after a programming (charging) operation, detections means for detecting a value within a charge storage element, which is located within the time cell.

09/703,335 discloses a time cell, which experiences a transition of states after a programming (charging) operation, and charging/discharging means regarding the transmission of the electrostatic charge.

09/703,340 discloses a time cell, which experiences a transition of states after a programming (charging) operation, wherein circuitry is connected to the time cell to read a state of the time cell.

09/703,344 discloses a time cell, which experiences a transition of states after a programming (charging) operation, wherein reading means are present to read a state of the time cell.

Drawings

1. Figures 1A-1J should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: element 328 (FIG. 3A). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

1. The disclosure is objected to because of the following informalities: element 220 should be referred to as element 230 as in consistent with naming the element a time detection unit as is previously stated (pg. 47, line 6). Appropriate correction is required.
2. The disclosure states a "programming operation," which is misdescriptive and is in fact nothing more than a charging operation. Appropriate correction to the numerous instances within the disclosure containing the misdescriptive material is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-23 and 37-40 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a clear definition of the detection means and the relationship of the detection means to the time cell in order to allow reading a state of the time cell, as well as a clear structural definition of the smart card and the structural relationship the smart card has to the time cell.

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Applicant must include a description, illustration, or a previous patent showing the components or features the said circuitry.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in view of Suzuki U.S. Patent No. 4,442,363. Regarding Claims 1, 24, and 28, the Admitted Prior Art teaches a time cell comprising a charge storage element, wherein the charge storage element is a floating gate in a floating gate field effect transistor (FGFET), wherein the charge storage element comprises an internal and insulating medium, which stores the electrostatic charge and insulates the internal medium respectively, wherein the physical properties of the insulating medium affect the rate of electrostatic discharge, as well as all components and corresponding structural limitations as previously established, as well as a discharged state before a charging operation, which is a non-time measuring state, and a controlled discharged state, which is the time measuring state after the programming operation, hereafter referred to as a charging operation (FIG. 1A). The Admitted Prior Art does not teach the concept of

measuring electrostatic discharge the charge storage element in order to obtain the corresponding elapsed time of the system, wherein detection means for detecting a current level of electrical potential at the charge storage element are included within the concept. Suzuki teaches a conventional RC timer, which teaches the concept of measuring the electrostatic discharge of a charge storage element by detecting a current level of electrical potential at the charge storage element in order to provide the corresponding elapsed time (Col. 1, lines 12+). It would have been obvious to a person skilled in the art at the time of the invention to adapt the Admitted Prior Art to form a capacitive timing system comprising existing structure with the ability to measure electrostatic discharge, as taught by Suzuki, in order to measure elapsed time. Both the Admitted Prior Art and Suzuki possess a charge storage element that provides an electrostatic discharge and the ability to read this discharge and provide a corresponding elapsed time is an existing teaching provided by Suzuki. By applying the existing concept of reading the electrostatic discharge of a generic charge storage element of Suzuki to the Admitted Prior Art, elapsed time results could be determined in the same manner only for any different structural source of the electrostatic discharge.

Regarding Claims 2 and 25, the combined Admitted Prior Art and Suzuki teaches a time cell, which has the ability of a conventional RC timer to measure electrostatic discharge in order to measure elapsed time. The combination does not explicitly teach conversion means for converting the detected level of electrical potential to an elapsed time period value representing an amount of time since storing the electrostatic charge. It would

have been obvious to a person skilled in the art at the time of the invention to recognize that the adapted Admitted Prior Art must inherently possesses the structure and means to charge/discharge time cells, as well as the ability to transition the collected raw data (amount of electrostatic discharge) and convert that data to a readable, corresponding elapsed time period value. By specifying conversion means, existing initialization structure of a typical RC timer is applied to the specific invention.

Regarding Claims 3-4, the combined Admitted Prior Art and Suzuki teaches a time cell, which has the ability of a conventional RC timer to measure electrostatic discharge in order to measure elapsed time. The combination does not explicitly teach that the length of the predetermined time period varies with an initial condition of the time cell after the charging operation, wherein the initial condition is determined by an initial electrical potential of the charge storage element. It would have been obvious to a person skilled in the art at the time of the invention to recognize that by applying teaching of a conventional RC timer, the length of the predetermined time period may be altered by varying the insulating medium after the charging operation, wherein by altering this thickness, initial electrical potential of the charge storage element is directly impacted. An RC timer possesses initial conditions, such as distance between capacitive plates, which may be altered in order to vary the length of the time period before a charging operation.

Regarding Claims 5 and 26-27, the combined Admitted Prior Art and Suzuki teaches a time cell, which has the ability of a conventional RC timer to measure electrostatic discharge in order to measure elapsed time. The combination does not explicitly comprise a time detection unit, a request processing unit, or a time generating unit for processing a time or other re-quests to generate a time response after reading the time cell for an elapsed time period. It would have been obvious to a person skilled in the art at the time of the invention to recognize that any capacitive timing device must inherently possesses the structure and means to charge/discharge time cells, as well as the ability to determine during the charging process whether the cells were successfully charged or not by processing commands or request signals generated. By including a time detection unit, a request processing unit, or a time generating unit, existing initialization structure of a typical RC timer is applied to the specific invention.

Regarding Claims 6-14 and 29-36, the combined teachings of the Admitted Prior Art and Suzuki inherently possess the methods of controlling electrostatic discharge during and after discharging and charging states of a time cell in order to gain measurement of the elapsed time of the system and the corresponding charging and read operation steps needed to initialize and process the information of the apparatus. It would be obvious to a person skilled in the art at the time of the invention to recognize that because the combination of the Admitted Prior Art and Suzuki form the structure of the inventive entity claimed, the methods needed to construct necessary insulating

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thickness, charge/discharge, detect, and read the components and data contained and produced are inherently possessed by the structure.

Regarding Claims 15-23, it would be obvious to a person skilled in the art at the time of the invention to construct a computer program to perform the method steps of Claims. It is well known in the art to build a computer program on a computer readable medium such as a floppy disk for easy insertion and data recall during use on a computer.

Regarding Claims 37-38, the combined Admitted Prior Art and Suzuki teaches a time cell, which transitions between a non-time measuring state (charging) to a time measuring state (discharging), which has the ability of a conventional RC timer to measure electrostatic discharge in order to measure elapsed time. The combination does not explicitly teach coupling means. It would have been obvious to a person skilled in the art at the time of the invention to recognize that any capacitive timing device must inherently possesses the structure and means to read and interpret data as to whether or not a predetermined time period has elapsed in order to verify the time at which to charge the time cell again. By explicitly including coupling means for a reading device and time determining means for time period verification, existing reading operations of a typical RC timer is applied to the specific invention.

Regarding Claim 39, the combined Admitted Prior Art and Suzuki teaches a time cell, which has the ability of a conventional RC timer to measure electrostatic discharge in

order to measure elapsed time. The combination does not explicitly teach an article of manufacturing comprising a smart card. It would be obvious to a person skilled in the art at the time of the invention to adapt a smart card to include a charge storage device, e.g. an RC timer device in order to measure elapsed time of a charged storage element with a smart card in order to calculate the elapsed time memory has been stored on a smart card. Any capacitive timing device possesses memory and means to store and read the memory and by applying this concept of measuring electrostatic discharge to calculate memory, a user may read the elapsed time a portion of memory that has been stored on the smart card and recharge or update the memory before it is erased.

Regarding Claim 40, the combined Admitted Prior Art and Suzuki teaches a time cell, which has the ability of a conventional RC timer to measure electrostatic discharge in order to measure elapsed time. The combination does not explicitly teach time determining means. It would have been obvious to a person skilled in the art at the time of the invention to recognize that any capacitive timing device must inherently possess the structure and means to read and interpret data as to whether or not a predetermined time period has elapsed in order to verify the time at which to charge the time cell again. By explicitly including time determining means for time period verification, existing reading operations of a typical RC timer is applied to the specific invention.

Prior Art

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Begin U.S. Patent No. 4,995,019 discloses a time period measuring apparatus wherein time measure is achieved by utilizing a time variable interpose, which comprises components that correspond to an RC circuit.
- Curtis U.S. Patent No. 5,195,061 discloses a practice timer for measuring elapsed time during an activity comprising a variable time constant RC circuit.
- Takeda U.S. Patent No. Re. 35,043 discloses a self-charging electronic timepiece comprising a time constant RC circuit.
- Sakaki U.S. Patent No. 5,500,834 discloses a device for measuring time elapsed after a turn off of a power source utilizing, among other components, the electrostatic capacitance of a capacitor during measurement proceedings.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael L. Lindinger whose telephone number is (703) 305-0618. The examiner can normally be reached on Monday-Thursday (7:30-6).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (703) 308-3121. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Michael L. Lindinger
Patent Examiner
Art Unit 2841

MLL
February 22, 2002

Bernard Roskoski
Primary Examiner
Bernard Roskoski
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